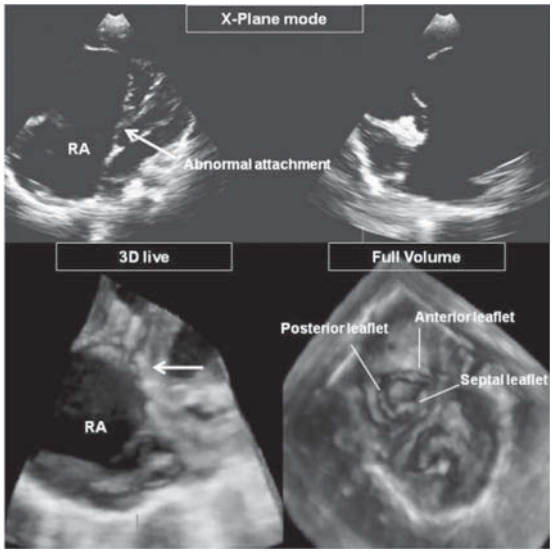
commissures in 86% (12/14). In cases of Ebstein's anomaly, TV appears to adopt a bifoliate configuration.

Discussion: 3DE permits a precise description of both the leaflets and of the commissures, allowing a distinct visualization of the coaptation plane. This technique is also useful to differentiate Ebstein's anomaly from tricuspid dysplasia. Thus, 3DE offers a better preoperative morphologic analysis of Ebstein's malformation. This technique may be of interest in order to better define the surgical strategy.



3DE assessment of Ebstein's malformation

332

Transcatheter closure of secundum atrial septal defect associated with deficient rims using the Amplatzer septal occluder

Issam Kammache [Orateur] (1), Anass Assaidi (1), Julien Mancini (1), Gilbert Habib (2), Alain Fraisse (1)
(1) AP-HM, CHU La Timone, Cardiologie Pédiatrique, Marseille, France – (2) AP-HM, CHU La Timone, Cardiologie Adultes, Marseille, France

Background: Transcatheter closure is an alternative to surgery for secundum atrial septal defect (ASD) closure but remain controversial in cases with deficient rims. We aim to assess the feasibility of transcatheter closure for secundum ASDs with deficient rims (<5 mm) other than the antero-superior using the Amplatzer septal occluder (ASO).

Method: Between january 1st, 2008 and May 15, 2011, 175 patients underwent percutaneous closure of ASD in our institution. We retrospectively analyzed the outcomes of the 39 patients (22%) with one or more deficient rim other than the antero-superior.

Results: The median age and weight was 9,3(1,1 to 85) years and 31,6 (8,8 to 99) Kg, respectively. Deficiency of the inferior rim (toward the AV valves, n=10), of the inferior- posterior rim (toward the inferior vena cava, n=13), or of the superior – posterior rim (toward the superior vena cava, n= 16) were suspected by transthoracic echocardiography and confirmed by transesophageal echocardiography in all the cases. Transcatheter closure was successfully accomplished in 33 (84,6%) of the cases with a median ASO size of 24(10 to 40)mm. A modified method of implantation (sizing balloon technique) was used in 28 patients (71,8%). In 6 patients (5 children), the ASD could not be closed percutaneously. Four other children experienced device embolization few hours after the procedure. They were subsequently operated with successful ASD closure and no further complication. Univariate analysis revealed that adult age was associated with low risk for device embolization and failure (p< 0,05).

Conclusion: Transcatheter closure of secundum ASD is feasible in patients with deficient rims other than the antero-superior. However, this cannot be recommanded because of an untolerable rate of embolization. Possibly, transcatheter closure of such secundum ASDs with deficient rims may be more succesful in the adult population

333

Transcatheter closure of multiple muscular ventricular septal defects with various Amplatzer devices

Anass Assaidi [Orateur], Fedoua El Louali, Issam Kammache, Béatrice Bonello, Florent Paoli, Alain Fraisse
AP-HM, CHU La Timone, Cardiologie Pédiatrique, Marseille, France

Background: The management of patients with multiple muscular ventricular septal defects (VSDs) is associated with important morbidity and mortality. Percutaneous transcatheter closure of multiple VSDs is challenging and scarcely reported. We retrospectively studied our experience with multiple unrestrictive VSD closure, using various Amplatzer devices.

Method and Results: Since January 2006, 9 children with "Swiss cheese" VSDs initially treated in infancy by pulmonary artery banding underwent transcatheter closure of their defect at a median age and weight of 2,4 (0,9 to 7) years and 13,5(7,3 to 23) Kg, respectively. Associated cardiac malformations were present in three of the nine patients, including tetralogy of fallot (n=1), D-transposition of the great arteries (n=1) and Neuhauser's anomaly (n=1) . One patient underwent surgical removal of an extremely tight pulmonary artery band, prior to VSD closure. Twenty seven defects were closed during 10 procedures, using various Amplatzer devices: 9 muscular VSD occluder, 2 ADO II, one 10 mm ASO and one 35 mm Cribriform. After the procedure no residual shunt was observed. We did not experience any mortality. Complications included the need for blood transfusion in 2 cases. Because no significant residual shunt was documented, the pulmonary artery band was successfully removed after VSDs closure in 6 patient and has been scheduled in the last case.

Conclusion: Transcatheter occlusion of multiple VSDs is safe and effective after initial pulmonary artery banding. Multiple defects can often be closed with a single device.

334

Right ventricular isthmus mapping to determine susceptibility to ventricular tachycardia in patients with tetralogy of fallot (ToF) repair

Zakaria Jalal [Orateur] (1), Hubert Cochet (2), Maxime De Guillebon (1), Nicolas Derval (3), Pierre Bordachar (3), Michel Haïssaguerre (3), Jean-Benoît Thambo (1), Frédéric Sacher (3)
(1) CHU Bordeaux, Cardiopathies Congénitales, Pessac, France – (2) CHU Bordeaux, Radiologie, Bordeaux France – (3) CHU Bordeaux, Rythmologie, Bordeaux, France

Background: Although surgical repair for tetralogy of fallot (ToF) improved the overall survival, it involves right ventricular (RV) scars that predispose to the late onset of ventricular tachycardias (VT).

Many reports have demonstrated reentry as the underlying mechanism of these VTs, with anatomically defined isthmuses.

Therefore we have evaluated the number and the location of these isthmuses and their correlation with inducibilty late after ToF repair.

Methods: Patients referred for either catheter ablation or pulmonary valvulation late after ToF repair were included. They underwent a 12-lead ECG, echocardiography, cardiovascular magnetic resonance (CMR) and an electrophysiological study including RV voltage mapping. In case of inducible VT, we mapped the VT circuit, define the responsible isthmus and ablate it.

Off line analysis of the signal allows to determine conduction velocity in the different isthmuses.

Results: 15 patients (33±12 yo, 66% M) were referred for sustained VT (n=1), premature ventricular beats (n=2), common flutter ablation (n=2) and prior to pulmonary valve replacement for the remaining. Mean QRS duration was 152±23ms. 5 patients (33%) had inducible sustained monomorphic VT (mean cycle length=270±87 ms).